

One School's Approach for Developing Critical Thinking Skills from Reception to Year 5

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Areas to be covered in this session are listed below. The presentation will include a resource pack for all participants, practical demonstrations of activities, interactive critical thinking exercises, and examples of whole campus initiatives and support plans developed by Unity College Junior Campus. Participants will be involved in a number of exercises that explore and support critical thinking skills for children. These will include Thinkers Keys and Visual/Auditory/Kinaesthetic teaching approaches to concepts.

PRESENTATION OVERVIEW

What is Critical Thinking?

- Definition
- Examples

Why teach Critical Thinking?

- Rationale
- Examples

How can we teach Critical Thinking?

- Whole School Scope and Sequence for the explicit teaching of Thinking Skills at Unity College R – 5 campus.
- Implementation Plan for phasing in and supporting the practical application of the Scope and Sequence Plan.
- A range of Critical Thinking Tools will be discussed and utilised by participants.
- Examples of activities, units of work and tools at Year levels and classroom level will be included.

What else supports and influences the development of Critical Thinking?

- Spark to a Flame – igniting what may already be happening in the school.
- The Role of a Teaching and Learning Co-ordinator – scope, sequence and possibilities.
- Other Major Teaching and Learning aspects that influence the development of Critical Thinking Skills in a Primary setting
 - e.g. - Teaching and Learning styles
 - Professional Development – structures, planning, access
 - Resources

What is Critical Thinking?

Michael Pohl describes Critical Thinking as “applying appropriate rules, criteria, standards, reasons and orders”. Knight and Bailey define it as “reasonable, reflective thinking that is focussed on what we believe or do”.

Its main characteristics are:

- justification skills
- analysis
- conceptual development
- formulating and investigating opinions
- planning and decision making
- analysing and evaluating data and information, including aspects such as bias, accuracy, truth versus perception, etc.
- investigating a range of options
- recommendations for change as a result of exploring options
- making and justifying decisions
- problem solving skills
- metacognition / reflective thinking skills

Why teach Critical Thinking?

As educators and students of the 21st century, we are teaching and learning in a world of rapid change and uncertainty. While it is difficult to predict the kinds of challenges, information loads, technologies, workplaces, types and longevity of careers we will face over the next fifty years, one thing is certain: namely that individuals who are equipped to think critically, creatively, caringly and reflectively will be better able to navigate the waters and challenges ahead of them. Within this context, I believe that we – as educators – have a moral, ethical and educational responsibility to provide our students with a rigorous and challenging Thinking and Learning Curriculum. Knowledge itself, access to it, and the respect that it (and the imparters of it) once held - have changed dramatically over the past twenty years, and it is likely that this transformation and rate of change will escalate.

Lutheran schools and educators are guided by the Lutheran Curriculum Statement which clearly articulates the *Qualities of Lifelong Learners* as being:

*“ Self-directed, insightful investigators and learners
Discerning resourceful problem solvers and implementers
Adept, creative producers and contributors
Open, responsive communicators and facilitators
Principled, resilient leaders and collaborators
Caring, steadfast supporters and advocates ”*

I believe that a Thinking and Learning Curriculum can only be effective if we focus on the explicit teaching of thinking skills and strategies as well as evaluate, cater for and teach students about their own learning styles. Without this 2-pronged approach, even the most comprehensive curriculum will become at least partially irrelevant to students whose learning styles preclude them from the learning program.

How can we teach Critical Thinking?

Michael Pohl identifies the following 3 key components for the successful construction and support of a Thinking Culture:

- Adopting a Whole School Approach
- Utilising a wide range of thinking strategies
- Ensuring meaningful learning activities.

Thinking communities and the skills necessary to participate meaningfully within them need to be developed – rarely do they simply emerge. This requires a co-ordinated, whole school approach that is planned, negotiated, supported with professional development and resourced. Thinking skills need to become not only an integral part of teacher planning and programming, but also be explicitly taught to students such that at any given year level, teachers can be assured that all students in their class have a sound understanding, skill level and language for particular thinking skills. While several recommended outlines exist which schools can adopt, the process of developing a scope and sequence for your particular school is a powerful professional development exercise and ensures that its' validity and relevance to your school setting is maximised

**Note: A copy of the Unity College R – Year 5 Scope and Sequence for Teaching Thinking Skills and an Implementation Plan is available from Alison Thacker at Unity College Junior Campus and is provided to all workshop participants.*

The following **Tools** may be useful in teaching and learning about **Critical Thinking**:

- Thinkers Keys (T. Ryan) e.g.
 - The What If Key
 - The Disadvantage Key
 - The Prediction Key
 - The Alternative Key
 - The Forced Relationship Key
 - The Brick Wall Key
 - The Variations Key
- Blooms Revised Taxonomy (Anderson's)
 - Analysis
 - Evaluating
- Philosophy for Children (moral and ethical dilemmas and conundrums)
- Future Problem Solving / Tournament of Minds
- Questioning techniques – question Matrices, Fertile questioning, use of Wait Time, CAMPER (Consequences/consistency, Assumptions/accuracy, Meaning/main points, Prejudice/point of view, Evidence/examples, Relevance/reliability)
- P.C.D. approach – Possibilities, Consequences, Decision
- POOCH – problem, options, outcomes, choices, how did it turn out?
- Creative problem solving Process
- Reflection / metacognition - thinking reflectively about how you have/are approached/in the problem.

The support pack for all workshop participants will include the following:

- *A whole school Thinking Skills Scope and Sequence which was developed by Unity College Junior Campus staff as a result of extensive P.D. sessions for all staff, trialling of a range of thinking tools, and identifying and sharing excellent practice already operating within the school.*
- *A three year Implementation Plan for phasing in, supporting and resourcing the above Scope and Sequence document.*
- *Lists of useful critical thinking resources.*
- *Examples of teacher programs that have been developed by staff at Unity College Junior Campus – ranging from highly experienced staff to a unit designed by a final year student teacher. These will demonstrate a broad range of approaches and individual teacher preferences for how knowledge, concepts and skills are developed and integrated within their classes.*
- *A range of Spelling activities and resources that list a range of appropriate learning activities for Visual/Auditory / Kinaesthetic Learners.*
- *Examples of Thinkers Keys class resources.*

What else supports and influences the development of Critical Thinking?

- Spark to a Flame – identifying pockets of excellent practice / willingness to trial new methodologies / enthusiasm for new directions, nurturing these with PD, resources and time, and providing a voice and platform for their efforts and accomplishments.
- Other Major Teaching and Learning aspects that influence the development of Critical Thinking Skills in a Primary setting
 - **V.A.K. teaching and Learning styles** – identify them, utilise all of them, use dominant styles for key concept learning but extend and develop the weaker styles. The more broad based the learning styles, the greater the range of social and cognitive interactions available to individuals. Gardners’ Multiple Intelligences support a broad range of learning styles. Grids that combine Gardners Multiple Intelligences and Bloom’s Revised Taxonomy enable teachers and students to cater for a range of preferred learning styles and manage differing levels of complexity congruently. However, educators should be cautious of providing a range of activities that may be fun, interesting and developmental, but quite nebulous in terms of learning outcomes. Such grids should be carefully constructed for the needs of the students as opposed to the needs of the grid, and activities should accompany explicit teaching and be supported by teacher direction, suggestions, and guidance.
 - Global/Specific Learners
 - Visual/Spatial Learners
 - **Professional Development**
 - Create structures and planning to support staff needs and Scope and Sequence Plans and Implementation Plans
 - Enable access for all staff

- **Resources** – Teaching and Learning Coordinator role, teams of teachers, printed, L.S.A. Thinking and Learning Curriculum Guidelines, other Schools’ experiences etc.

The following is a summary of some of the major characteristics and teaching implications for learning styles.

VISUAL LEARNERS: visual images are critical in their learning

Characteristics	Teaching Implications
<ul style="list-style-type: none"> • rely heavily on what they SEE in order to know or understand • tend to focus on PICTURES and diagrams in preference to written or heard information • have a strong sense of COLOUR • prefer to read rather than being read to • memorize by seeing the picture, think using GRAPHIC images. • tend to be good spellers and recognise when a word doesn’t “LOOK right”. • Are less distracted by noise • May have trouble remembering verbal instruction and their concentration will tend to wain if too much verbal input. • Like to organise and order information and their surroundings • Tend to remember faces rather than names • Will tend to use phrases that have visual references – i.e. “I <i>see</i> what you mean” “it <i>appears</i> to be correct” “ <i>watch</i> what happens”... • Usually well organised 	<ul style="list-style-type: none"> • Use illustrations, flow charts, graphic organisers etc to organise and chunk information • Use colour coding, highlighters, coloured paper etc for grouping, classifying and making associations between pieces of information. • Use VISUALISATION as a powerful tool for spelling, setting the scene in creative writing, poetry, imagining maths problems etc. • Provide written directions and outlines of work expectations, units of work, assessment criteria etc. • Allow and encourage students to draw information from illustrations, diagrams, graphs etc. • Include videos, films, computer slideshows, theatre, performing arts and demonstrations within the key learning areas. • Develop Y Charts – “looks like...sounds like...feels like...”

AUDITORY LEARNERS: Words and sounds are critical in their learning

Characteristics	Teaching Implications
<ul style="list-style-type: none"> • TALKS to self • Learn best by LISTENING and TALKING • SPOKEN LANGUAGE is easier than written language • Need to HEAR information to know it • May find Maths and Writing more difficult than other areas of study. • Can repeat verbal instructions back to you but may find written instructions difficult to follow. • Tend to memorise by steps, sequence etc. • Tend to remember names but not faces. • Often unable to follow body language and facial expressions. • Tend to like music and other performing arts presentations. • Tend to use expressions such as “LISTEN to me”, “I HEAR what you are saying” “TELL me more please”. 	<ul style="list-style-type: none"> • Provide verbal instruction and ample opportunity for students to discuss their thoughts with partners, in small groups or whole class discussion, especially prior to written work. • Read stories, novels to students. • Use audio taped stories and group reading methodologies for supporting reading. • Interviews, debates, open forums etc. • Guest speakers and lecturers. • Practise spelling verbally, not just in written form. • Allow opportunities for students to conference with teacher prior to and during written work to enable verbal feedback. • Incorporate music, rhythm and rhyme in learning program. • Develop Y Charts – “looks like...sounds like...feels like...”

KINAESTHETIC LEARNERS: Feeling and doing is critical in their learning

Characteristics	Teaching Implications
<ul style="list-style-type: none"> • Prefer HANDS-ON learning • Learn by DEMONSTRATIONS, modelling and then “having a go” at the activity. • Learn best by DOING. • Prefer ACTION and adventure • Can assemble models and apparatus without needing directions. • Strong use of GESTURES. May often respond with exaggerated PHYSICAL reactions to situations. • Tend to be restless and find sitting still for long periods of time difficult. • Learn better with PHYSICAL ACTIVITY. 	<ul style="list-style-type: none"> • Incorporate demonstrations, modelling and experimentation with a range of mediums and textures. • Allow students to demonstrate their understandings beyond traditional written products e.g. models, sculptures, plays etc. These need to be seen by students as being valued and assessed equitably with other forms. • Use dance, drama, role playing, movement etc. in explicit teaching of new concepts and activity based learning. • Use computers to reinforce learning through touch. • Regular short bursts of active movement within lessons to assist

<ul style="list-style-type: none"> • Tend to remember people by events they were associated with or by what they have done rather than by name or face. • May have good co-ordination and their strengths are often in the sporting arena. • May use phrases such as “I FEEL for you”, “ I can’t GRASP this concept”, “I’m trying to PLAY with the notion”. 	<p>with concentration and refocussing.</p> <ul style="list-style-type: none"> • Utilise a range of tactile materials for spelling and reading programs e.g. pipe cleaners, sandpaper, wool, chalk, paint, crayons etc. • Incorporate movement and dance into areas such as spelling – e.g. making up raps, dancing out their words, jumping out the number of syllables etc. • Assist students to memorise by “WALKING” through learning – recalling significant events, emotional responses, “placing themselves in other’s shoes”, marching out sight words etc. • Develop Y Charts – “looks like...sounds like...feels like...”
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*Note: While students will usually have a preferred 1 or 2 learning styles, different learning experiences will require students to utilise one style more than another due to the nature of the activity. It is also important that students’ weaker styles are given the opportunity to develop in order to increase their learning modalities and breadth of social interaction with others.

GLOBAL / SPECIFIC LEARNING STYLES

Global Learners have traditionally been referred to as Right Brain Dominant Learners, with Specific Learners referred to as Left Brain Dominant. The characteristics of each are outlined below and while we can’t always accommodate the needs of one type of learner, we do need to ensure that our teaching and presentation style is not constantly alienating or irritating to one group or the other. Again, many of us will utilise both aspects at various times, however we tend to be dominant in one or the other over a period of time.

GLOBAL LEARNERS	SPECIFIC LEARNERS
<ul style="list-style-type: none"> • Want to see the whole picture first and then work out its key components and details afterwards • Tend to see the “Big Picture” with respect to problems, issues, events etc. • Usually highly imaginative • Pictorial • Tend to demonstrate feelings quite freely • Often intuitive 	<ul style="list-style-type: none"> • Want to see the details first and gradually build up to the “Big Picture” once all the pieces are in place • Focus on all the details of issues, events, problems etc. • Usually very linear, organised, logical and sequential learners • Like to operate within systems, control and order • Tend to control their feelings more than Global Learners

<ul style="list-style-type: none"> • Make connections between pieces of information easily • Can move relatively easily into Specific mode of Thinking and Operating 	<ul style="list-style-type: none"> • Tend to focus on cause/effect aspects • Find it difficult to move into Global mode of thinking and operating
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In Summary:

Yoram Harpaz, lecturer at The School For Educational Leadership in Israel, defines the role of education as knowing “how to engage and relate to knowledge, not knowledge itself”. He lists critical thinking as a key component of this process. The nature and status of knowledge itself, and those who were the guardians of it, has changed markedly over the past twenty years. It is now easily accessed, available in massive chunks, and evolving at a rapid rate. In order for children to manage, manipulate, understand, synthesise and create with it, they need to be able to critically engage with it. The challenge for us as educators is to develop thinking communities within our schools in which individual students are explicitly taught and given opportunities to explore and refine a range of critical and creative thinking skills. A whole school approach, range of critical thinking tools and strategies and emphasis on relevant and meaningful content and activities will support a successful shift into a thinking skills based education. Within such an environment, students can then critically manage, understand, make connections with and generate new understandings and skills in order to participate morally, ethically, intellectually and spiritually within the rapidly changing world they are inheriting.

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